97

TITUSVILLE AMATEUR RADIO CLUB

NEWSLETTER

JANUARY, 1997

OFFICERS

PRESIDENT: Bud Hughes K4CWG 269-0779 SECRETARY: Marty Coin WD4JNM 264-9447
V. PRESIDENT, Pike Abell W4EPU 269-4208 TREASURER: Clyde Lee K4EOS 267-9375

CLUB INFORMATION

TARC MEETINGS :	**Monthly on 4th Tuesday at 1900 hrs at Jaycee Building.**
TARC NETS:	**VIP - Thursdays at 1000 hrs on 146.910**
	FRIENDSHIP - Thursdays at 1830 hrs. ao146.910
	MOSQUITO - Wednesdays at 1900 hrs on 28.333
TARC REPEATERS:	**VHF - 146.910 and146.970. UHF 444.150**

PRESIDENT'S CORNER

By Bud Hughes K4CWG

The Titusville Amateur Radio Club election and installation of Officers and Board of Directors for the year 1997 was concluded at the annual Christmas dinner on December 19, 1996. Attendance was very good and everyone enjoyed the delicious food catered by Pumpernickel's Delicatessen and the pastries as prepared by Sherry KF4HTC, Becky KF4HTB and Patty KF4MUV.

My thanks to Clara KE4YQL for yet another super job as chairperson for this special event.

Guess what! Even after several nature stops by Santa and confrontations with security personnel, his persistence paid off. Not only did he make it pass the security guards, he brought many gifts for everyone and even let me sit on his lap and tell him my wishes for Christmas. At the end of the party that jolly old man was supposed to climb into his sled and bid his reindeer "heave ho". Instead he was last seen getting into the van with Carole KC4VIN and heading over to Carole's house. You just wait til I see Jose KC4VIN!

Ralph AE4LE performed the Officer-BOD installation rites. As always he did an outstanding job. Thanks, Ralph.

The Ham of the Year Award went to Warren KS4GP. This guy is a great asset to our club and I am delighted to have him as a friend.

For those who were unable to attend we missed you and wish that circumstances would have permitted you to be with us.

Isn't it nice to make New Years resolutions and be able to look back and see that you have succeeded in your endeavors? If I should grade my success or lack thereof for the resolutions I made at the beginning of 1996, then I find a fair mixture of yeas and nays.

Last but not least thanks to you for electing me as your president, and thank you again for electing the wonderful fellow officers and board members to work with during the upcoming year.

Best to all of you for 1997.

HAPPY BIRTHDAY

JANUARY BIRTHDAYS

JAN. 1 N4ZNQ JIM MEEKS
JAN. 3 KE4AGO BILL REALY
JAN. 5 KE6DPF PAUL YOCOM
JAN. 8 N4AWX BRIAN VAN ALSTINE
JAN. 8 N4KHU DAVE ROBERTS
JAN.10 AA1HB CHARLIE CHENEY
JAN.11 KE4RFJ DEBBIE BUTTON
JAN.12 KS4YU STEVE GRINER
JAN.12 KE4NYM MATT KELLER
JAN.12 K4WSE JOHN WOOD
JAN.13 WD4DIR JOHN MESSINA
JAN.13 KE4TTZ SANDY THORNE
JAN.14 WB4AXB ART BURSCH
JAN.17 KO4NQ FRENCHY POULIN
JAN.17 KE4CRG STEVE SAUNDERS
JAN.19 KB7UOW BRUCE ERICKSON
JAN.20 KE4TQZ SANDRA GREENWALD
JAN.21 KE4MFT EDDIE GASS
JAN.21 KE4MXF KAY JORDAN
JAN.22 KF4BGR EDWARD LYONS
JAN.23 KD4GPF JOE MYERS
JAN.23 KC4VIN CAROL RAMOS
JAN.26 K4SJC LES GRINER
JAN.26 KD4ZAI WALT HOLLOWELL
JAN.28 WA4JWU ROGER VERBLE
JAN.28 KA1BDC ART DeANGELIS

IT ALL BEGAN WITH JUST ONE MAN

By Roger Verble, WA4JWU

I moved to Titusville in 1969 to live with my dad. To me he was the greatest person to ever live, even though we had our differences - one of these being ham radio.

In 1969 I was but eight years old, and the thing I hated most of course was the noise that was always coming out of the speaker on that darn radio. Now you have to remember that technology with what it was, was antiquated compared to today. The rigs were broad banded for one thing. It was always making some kind of noise, even when no one was talking, and needless to say, the thing was always on. It really interfered with my cartoons on TV.

The first friends I made in the neighborhood lived behind me. The McLeans. This was to become the beginning of a family of hams, though it would not become evident until many years later.

David, the oldest son of the McLeans began to spend a lot of time at my house, though it was not to see me. He was there to spend time with my dad, and a friend of my dad's, Ki Petrick, **WA4HSY**. They would spend hours talking and tinkering in the dinning room. (Later I was to learn this room was called the Ham Shack). David was hooked. He began studying and received his license, **WB4SIG.**

After David got his license, his father, Jim McLean, took interest in ham radio. He too began to spend endless hours at my house. That was all it took. Jim received his license, **WV4YEE.**

When I turned 10 years old, Dad made a deal with me. Although I can't recall what his part of it was, I do remember what mine was - to obtain my ham ticket. So I studied hard on the code and theory and received my license in 1971, **WA4JWU**.

As time passed David grew up, got married and had children. He convinced his wife to get her ham ticket. Diane became **KA4WHP**. Then their children began to follow. Derek, **KE4BBD** and Daniel, **KF4IGI.**

Some years passed and Donald McLean (who had become my oldest and best friend), was helping me rework my dads antennas. Dan told Don that he would pay for the class and test if Don would get his ticket. So, with a lot of ragging from me, a couple of months later Don became **KE4LNS**. Don didn't stop here. He talked his wife, Arlene, into her license, **KE4WJT.** Then his mother, Helen, **KE4VWB,** his sister, Terry,

KF4CDJ. Nephew Joey, **KF4IGC**, and his daughter, Heather, **KF4IGH**. And at last report his son, Christopher, plans to get his license, also.

When I turned thirty-five years old, my fiancee, Sandra, threw a surprise birthday party for me. All my closest friends attended, They were asked not to bring any presents, for friendship was more than enough. Though she did have one present for me. A certificate with my license on it, so I thought. Upon closer examination, the certificate had her name on it. Boy, was I shocked! It seems Bud and a few other friends at the club had been helping her study (without my knowledge) while I was at work. Sandra became the newest ham in our group, **KF4GNZ.**

These are but a few people whose lives were touched by one mans love of ham radio. Though some in the group have become silent keys - including my dad, Oren A verble, **WA4BTU.** We shall continue to pass along the legacy of ham radio to our family and friends for generations to come.

RADIOFREQUENCY SAFETY PRACTICES

From W5YI Report 12/15/96

The FCC's Office of Engineering and Technology adopted and released a *Report and Order* on August 1, 1996, which had an immediate effective date. The new guidelines incorporate two tiers of exposure limits. These exposure tiers are based on whether exposure could occur in an occupational or "controlled" situation or whether exposure could occur to the general population or in an "uncontrolled" situation.

In the FCC's recent *Report and Order* , certain Amateur radio installations were made subject to routine evaluation for compliance with the FCC's new RF exposure guidelines. Amateur licensees are now expected to demonstrate their knowledge of FCC guidelines through examinations. Applicants for new Amateur licenses and renewals also will be required to show that they have read and that they understand the applicable rules regarding RF exposure.

Before causing or allowing an amateur station to transmit from any place where the operation of the station could cause human exposure to RF radiation levels in excess of the FCC guidelines amateur licensees are now required to take certain actions.

According to Part 97.13(c) routine RF radiation evaluation is required if the transmitter power of the station exceeds 50 watts peak envelope power (PEP). Otherwise the operation is categorically excluded from routine RF radiation evaluation.

Where routine evaluation of an Amateur station indicates that the RF radiation could be in excess of the FCC-specified limits, the licensee must take action to prevent such an occurrence. Such actions could be in the form of altering operating patterns, relocating antennas, revising a station's technical parameters...such as frequency, power or emission type or combinations of these and other remedies.

In complying with the Commission's *Report and Order*. the FCC said Amateur operators should follow a policy of prudent avoidance of excessive RF exposure. The FCC said that it "...will continue to rely upon Amateur operators, in constructing and operating their stations, to take steps to ensure that their stations comply with the MPE (Maximum Permissible Exposure) limits for both Amateur operator (controlled) and general public (uncontrolled) situations."

In that regard, Amateur radio operators and members of their immediate household are considered to be in a "controlled environment" and are subject to the occupational/controlled MPE limits. Neighbors who are not members of an Amateur operator's household are considered to be members of the general public, however, since they cannot reasonably be expected to exercise control over their exposure. In those cases, general population/uncontrolled exposure MPE limits will apply.

"In order to qualify for use of the occupational exposure criteria, appropriate restrictions on access to high RF areas must be maintained and educational instruction in RF safety must be provided to individuals who are members of the Amateur operator's household."

Persons who are not members of the Amateur operator's household but who are present temporarily on an Amateur operator's property may also be considered to fall under the occupational/controlled designation provided that appropriate information is provided them about RF exposure potential if transmitters are in operation.

Amateur radio facilities represent a special case for determining exposure, since there are almost an infinite number of possible antenna types that could be designed and used for Amateur stations.

The FCC said that "generic equations" can be used for analyzing fields due to almost all antennas, although the resulting estimates for power density may be overly conservative in some cases.

It was on this basis that the Question Pool Committee decided to utilize the RF exposure tables proved by Dr. Wayne Overbeck, N6NB. With the help of the ARRL Lab, these tables have been refined to come up with estimated distances to meet RF power density guidelines for various antennas, frequency bands, and power limits in both controlled and uncontrolled environments. These sample exclusion distance tables are now part of the Element 2 and 3A question pools.

Here is a sample table based on a 14 Mhz (20 meter frequency. (Controlled limit: 4.59 mw/cm2, uncontrolled limit: 0.92 mw/cm2. These power densities were developed by applying a rather complex formula and take into consideration a ground reflection factor.)

3-Element triband Yagi Antenna - 6.5 dbi gain

Transmitter power (watts)	Distance to controlled limit	Distance to uncontrolled limit
100	4.6 ft.	10.3 ft.
500	10.3 ft.	23.1 ft.
1000	14.6 ft.	32.7 ft
1500	17.9 ft.	40.0 ft.

For example, this "worst type scenario" suggests that the above antenna running 1000 watts, (constant key-down transmitter) should be a minimum of 32.7 feet from their neighbors. The exclusion distance is shorter if the duty cycle (defined as the average on-vs-off time over 30 minutes in an uncontrolled environment, a 6 minute period in a controlled environment) is less. Amateur operators and their families should be at lease 14.6 feet away from the antenna. Tables shown in the Question Pools are for various (3.5 Mhz to 446 Mhz) frequency bands, using typical power levels and dipole, vertical and Yagi antennas. The Overbeck formulas make it very easy for an Amateur to determine if he/she is in compliance with the new MPE guidelines. Amateurs that meet these worst scenario calculations will have performed the routine evaluation required by the new Part 97 RF safety rules. Overbeck will also shortly release his computer program that makes these calculations into the public domain.

Art Feller of Fairfax, VA is still fighting to keep his W4ART station call sign. You will remember that he applied for the call and received it under Gate 1 as a former holder. He claims that W4ART was his previously held call sign. But the FCC did not agree. The FCC canceled the call sign stating that he could not be considered a "former holder" since he obtained the call sign through "favoritism" and never legitimately held this call sign.

Feller's call sign reverted back to his old call and he was advised that he could obtain the W4ART call sign under Gate 3 if it is still available. Gate 3 is expected to open to Advanced Class licensees shortly.

Feller, an ex-FCC employee, has continued to use the W4ART call sign although he has been instructed not to do so. He contends that "as was common practice and widespread FCC policy in 1974, I made an informal request for the call sign W4ART, or a similar call sign, at the same time I notified the Commission of a change of address. The call sign was granted for my amateur radio station by the Commission in 1974."

Two years later, the FCC looked into the issuance of Amateur call signs to persons not qualified to receive them. The FCC eventually ruled that "Commission employees will not be permitted to retain call signs that were not assigned in accordance with existing Commission rules."

Feller has now appealed to FCC Chairman Reed Hundt, his Congressman, the ARRL, and the FCC's Inspector General. He claims that (1) the FCC has not responded to his letters of August 21, 1996, leaving the matter open, (2) the Commission staff canceled his call sign while the matter was still open and (3) he was not notified about the cancellation The fact remains, however, that Feller was indeed notified by letter on July 23 that the "...grant of vanity call sign W4ART on June 29, 1996, is hereby set aside...[and]...your callsign returns to KB4ZJ."

TEST YOUR KNOWLEDGE!

By H. Ward Silver N0AX
From QST Jan.1996

At first glance this probably looks like a difficult quiz. Too many numbers and symbols, right? Well, the key to a perfect score is as close as a license study guide, *The ARRL Handbook,* or any number of references. A calculator will come in handy, too.

1) Doubling the voltage across a load causes the power dissipated to:
a. double
b. triple
c. quadruple
d. remain unchanged

2) The smallest noticeable change in audio volume detectable by the human ear is:
a. 1 dB
b. 3 dB
c. 6 dB
d. 10 dB

3) Calculate the power ratio from the equivalent dB change:
a. 3 dB = ____: 1
b. 6 dB = ____: 1
c. 10 dB = ____: 1
d. 16 dB = ____: 1

4) If a load resistance is doubled and the voltage across it doesn't change, the power dissipation....
a. doubles
b. remains the same
c. is halved
d. is quartered

5) Match the reciprocals of the units:
a. resistance b. admittance
b. impedance e. conductance
c. reactance f. susceptance

6) Match the units with the physical quantity:
a. electrical charged. → d. coulombs
b. energy → e. mhos
c. conductance ← f. joules

7) A kilowatt amplifier that is 50% efficient needs about how much current from a 220-V ac circuit when producing full output?
a. 5A b. 8A c. 9A d. 15A

8) If a 13.2-V lead-acid battery has an internal impedance of 0.05 Ω, how much current will it supply through a dead short?
a. 125A b. 210A c. 26 4A d. 353A

9) A lamp driver IC's output is rated at 100mA. What is the lowest value of load resistance the IC can handle in a 24-V circuit?
a. 125 Ω c. 360 Ω
b. 240 Ω d. 480 Ω

10)An amplifier tube's screen supply ballast, or loading, resistor needs to draw 20 mA from an 800-V supply. What is the lowest power rating for the resistor that will allow it to dissipate the necessary energy?
a. 1 W b. 5 W c. 10 W d. 20 W

11) A transistor power amplifier's bias resistor needs to produce a 0.7-V drop at a current of 5 A. What's the correct resistance value and power dissipation?
a. 7.1 Ω and 3.5 W
b. 3.5 Ω and 7.1 W
c. 7.1 Ω and 2.5 W
d. 3.5 Ω and 3.5 W

12) All you have is a 24-V power supply to drive a 12-V light bulb. The bulb needs 10 mA of current for full brightness. What value of series resistor will allow the 24-V supply to fully light the bulb without overloading it?
a. 600 Ω
b. 1200 Ω
c. 1800 Ω
d. 2400 Ω

13) Which of the following is a unit of power?
a. joules/second
b. watt-hour
c. coulombs/second
d. joules/coulomb

14) What is the dc feed-point current of a 75-Ω dipole driven with 500 W at 7.05 Mhz? _____

Bonus! What was the nationality of Georg Ohm?____

Total Your Score!

15-21: You obviously managed to remain awake during the theory part of your license class

8-14: A fair score, especially if you're unaccustomed to working with formulas.

1-7: You could have scored this high by just guessing. Why not spend some time getting reacquainted with electrical theory? (It's the foundation of how our radios work, after all.)

ANSWERS ON PAGE 6

TREASURER'S REPORT

By Clyde Lee K4EOS

BALANCE FORWARD FROM 1995	2,780.00
DEPOSITS YEAR TO DATE	11,923.67
TOTAL INCOME	14,703.70
EXPENDITURES	8,681.16
BALANCE AS AT 12/31/96	6,022.54

AT THE JANUARY MEETING I WILL HAVE A LIMITED NUMBER OF TICKETS FOR THE ORLANDO HAMFEST IN FEBRUARY. THESE ARE $6.00 EACH. YOU SAVE $3.00 PER TICKET. PLEASE BRING THE CORRECT CHANGE FOR THE NUMBER OF TICKETS YOU INTEND TO PURCHASE.

THANK YOU

THANKS TO THE CLUB FOR GIVING ME THE HONOR OF RECEIVING THE SOAP ON THE ROPE AWARD. I WILL USE IT EVERY SATURDAY NIGHT WITH DIGNITY AND HONOR
SANDY KE4TQZ

FOR SALE
ICOM AT-150
AUTO ANT. TUNER
NEW (NEVER USED) IN BOX
$250.00
BILL HEIL KD4PLA. TEL.268-5213
LOOKING FOR
LONG WIRE AUTO TUNER

CHRISTMAS DINNER PARTY

By Marty Coln WD4JNM

The party was a huge success with 75 (the best Clara and I could count) members and guests attending.

Clara KE4YQL read politically correct *Twas the Night Before Christmas.*. Officers and Board of Directors were installed by Ralph AE4LE. Warren Murray KS4GP was made Ham of the Year. Sandy KE4TZQ was given the prestigious Soap on the Rope award. The dinner was a sight to behold as food was stacked all over the tables. Fred KE4HOE won a cash drawing, and donated half his winnings back to the club.

QUIZ ANSWERS

1) c. Power is proportional to the square of the voltage.
2) a.
3) a. 2:1, b. 4:1, c. 10-1, d. 40.1
4) c.
5) a. e, b. d, c. f
6) a. e, b. d, c. e "hmo" is "ohm" spelled backwards)
7) c - The amplifier needs 2000 W. which at 220 V requires 9.09 A of current
8) c. - 13.2 C divided by 0.05 Ω. Don't drop a wrench across those terminals!
9) b - 24 V divided by 0.1 A.
10) d - 20mA at 800 V is 16 W. Choose a 20 W or larger resistor.
11) a - 5 A divided by the drop of 0.7 V = 7.1 Ω, while 5A x 0.7 V equal 3.5 W
12) b - Dropping 12 V across a resistor at a current of 10 mA requires a 1200 ohm resistor.
13) a - 1 J/sec is 1 watt, b - is energy, c - is current, d - is voltage
14) Zero! The dc component of an RF waveform is zero

Bonus: Georg Ohm was Swedish

ABELL'S ANECDOTES

By Pike W4EPU

HORSE TRADIN' CAN BE PROFITABLE:

Quite some time ago Ralph and Norm were small horse and mule farmers. They lived right across the road from each other and were good neighbors and friends. Ralph had a beautiful horse named Lightnin'. Lightnin' was not only a good plow horse but was good with kids.

Norm took a liking to the horse. He walked across the road and asked Ralph if he would consider selling ol' Lightnin'. After much haggling over the price, Ralph sold the horse for $100. Now Norm was the proud owner.

Several days later Ralph started having second thoughts about selling Lightnin'. Mainly because his kids missed having the horse very much. "Norm" he said, "I reckon I made a mistake when I sold you ol' Lightnin'. The kids are mad at me and I kind of miss him myself. You reckon you could see your way to sell him back to me?"

"Yeah Ralph, seeing how you and your kids feel, I suppose I can let you have him back. Give me 200 bucks and he's yours." The deal was closed.

It wasn't but a few days when Norm began having second thoughts. "I was a fool selling that horse back to Ralph," he said to his family. "I'll see if I can buy him back." After dickering around for several days, Norm bought the horse back for $300.

Several days later the horse changed hands again. The horse tradin' went on for several months. At each transaction $100 was added to the price, until the price for ol' Lightnin' had risen to $2500, and Norm was the current owner.

One day a long white Cadillac with Texas plates pulling a horse trailer came screeching to a halt in front of Norm's house. A tall gentleman wearing a ten gallon hat got out and approached Norm in the barn lot. "That's a mighty fine lookin' horse you got there, podner," drawled the Texan. "Don't supposin' you'd be likin' to sell 'em, woodja?" "Nope, reckon not. Can't sell ol' Lightnin'. He's like a member of the family," explained Norm.

"Well, if'en you change your mind, I'd give you $3500 for em." In not much more time than it took to shake hands, ol' Lightnin' rode off in the trailer, while Norm stood clutching $3500 in bills.

In a few days, not knowing about the deal with the Texan, Ralph approached Norm to re-purchase Lightnin'. When Norm told Ralph what happened, Ralph was noticeably upset. He angrily blurted out to Norm, "What'd you go and do that for? Don't you know that you and I were makin' a good livin' off'n that hoss?" 73s es 88s

ZAP 'EM BACK TO LIFE

By Clyde Lee K4EOS

Yes, you can put extra life into old Nicads. I have revived numerous old Nicad batteries which seemed to have given up the ghost. The process involves a quick touch of 110 V. AC. (I made up a short AC cord with 2 alligator clips and a plug for the wall receptacle.) Hit the plus and minus sharply (just a tap). DO NOT HOLD it to the battery. I wear eye protection when doing this. Just this week I rejuvenated a 12 V battery pack which would only charge up to 5.3 volts. Now it's back up to 12 volts as it should be.

YOU'LL HAVE TO DO THE WASH --- SUE, EDNA AND I ARE CONDUCTING A V.E.C. SESSION IN 30 MINUTES

MEMBERSHIP UPDATE

Total membership: 274. (199 regular, 69 family, 6 honorary)

NEW MEMBERS: KC4GWF MICHAEL HANIOTES
KE4MXC JEAN GONZALEZ
N0ZEQ RICHARD CRUMPTON

RENEWALS:
KF4BGR EDWARD LYONS
K4BZJ LESS WIDICK
KF4IGB PAT WIDICK
AD4CU PAT PATTERSON
KE4CYE EARNEST CODY
W9DGD JIM CAMPBELL
AA4FY NORM FOSTER
KF4IGO JUNE FOSTER
KD4HNW KEN DENHAM
K4KON BRUCE HOOVER
W4LEW JOHN WALTERS
KA4LTK LLOYD MULLENS
AB4P BILL MALLMAN
KK4SH VINCE GONZALEZ
K1SKQ FRANCIS McDERMOTT
K2TNT GEORGE FISCHER
KC4UWK AL KOLLER
KD4UZS JOE CARTER

HAMFESTS:

01/4-5	Ft. Meyers
01/11-12	Sarasota
01/18	Crystal River
01/19	Pinellas Park
02/1-2	Miami
02/8	Arcadia
02/8	Pensacola
02/15-16	Orlando
02/22	Brooksville
03/8	Englewood
03/15-16	Ft.Walton Beach
03/22	Stuart
03/22	Sebring
03/29	Fanning Springs

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HAPPY NEW YEAR !!